FIG. 1

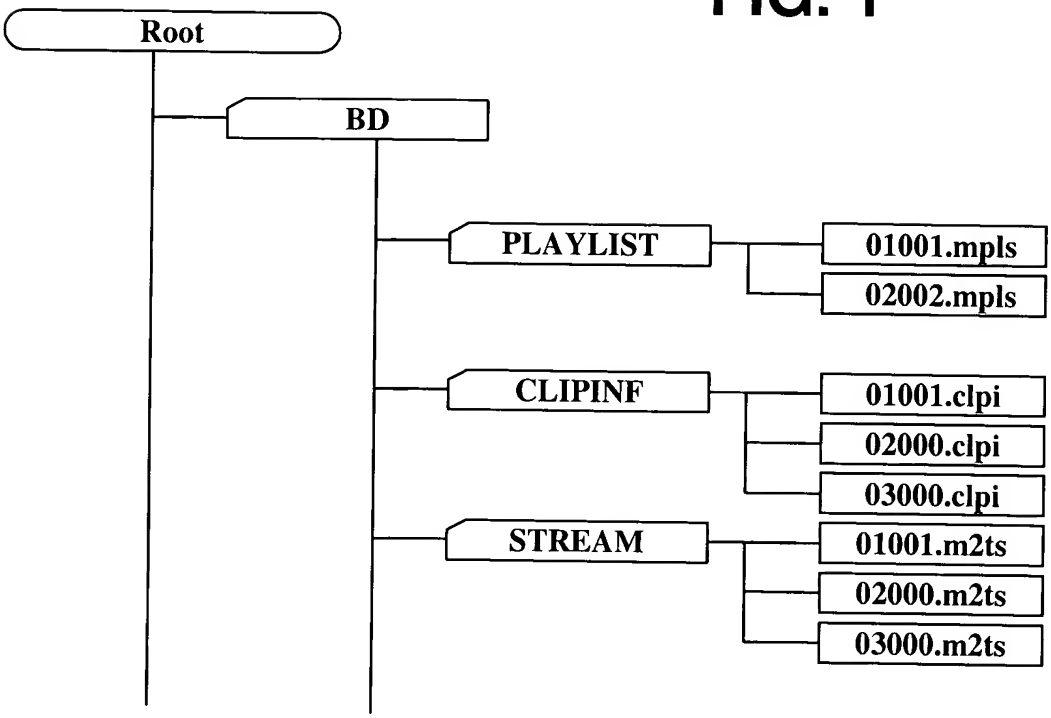

Root
BD
PLAYLIST
01001.mpls
02002.mpls
CLIPINF
01001.clpi
02000.clpi
03000.clpi
STREAM
01001.m2ts
02000.m2ts
03000.m2ts

FIG. 2

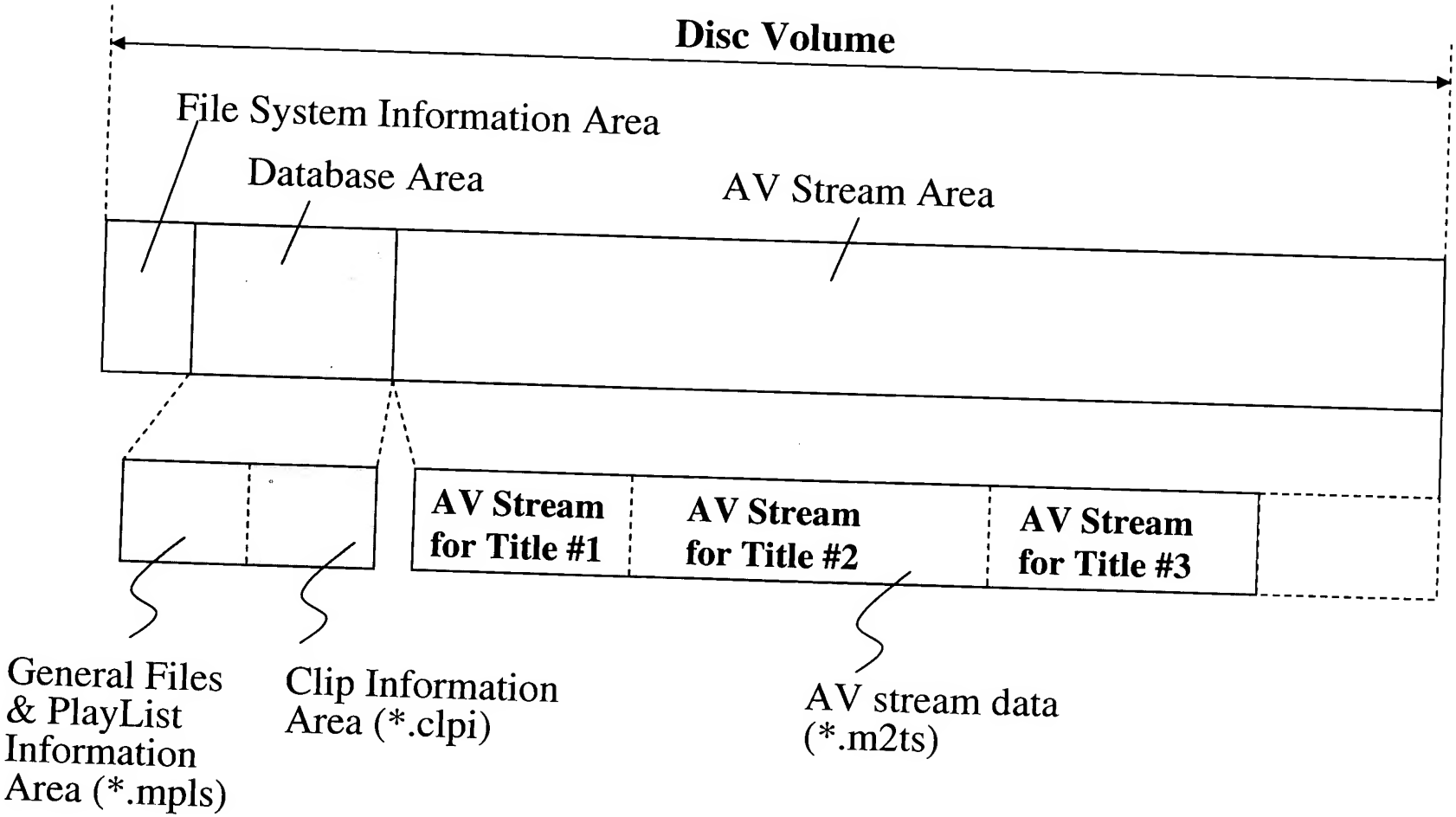

Disc Volume
File System Information Area
Database Area
AV Stream Area
AV Stream for Title #1
AV Stream for Title #2
AV Stream for Title #3
General Files & PlayList Information Area (*.mpls)
Clip Information Area (*.clpi)
AV stream data (*.m2ts)

FIG. 3

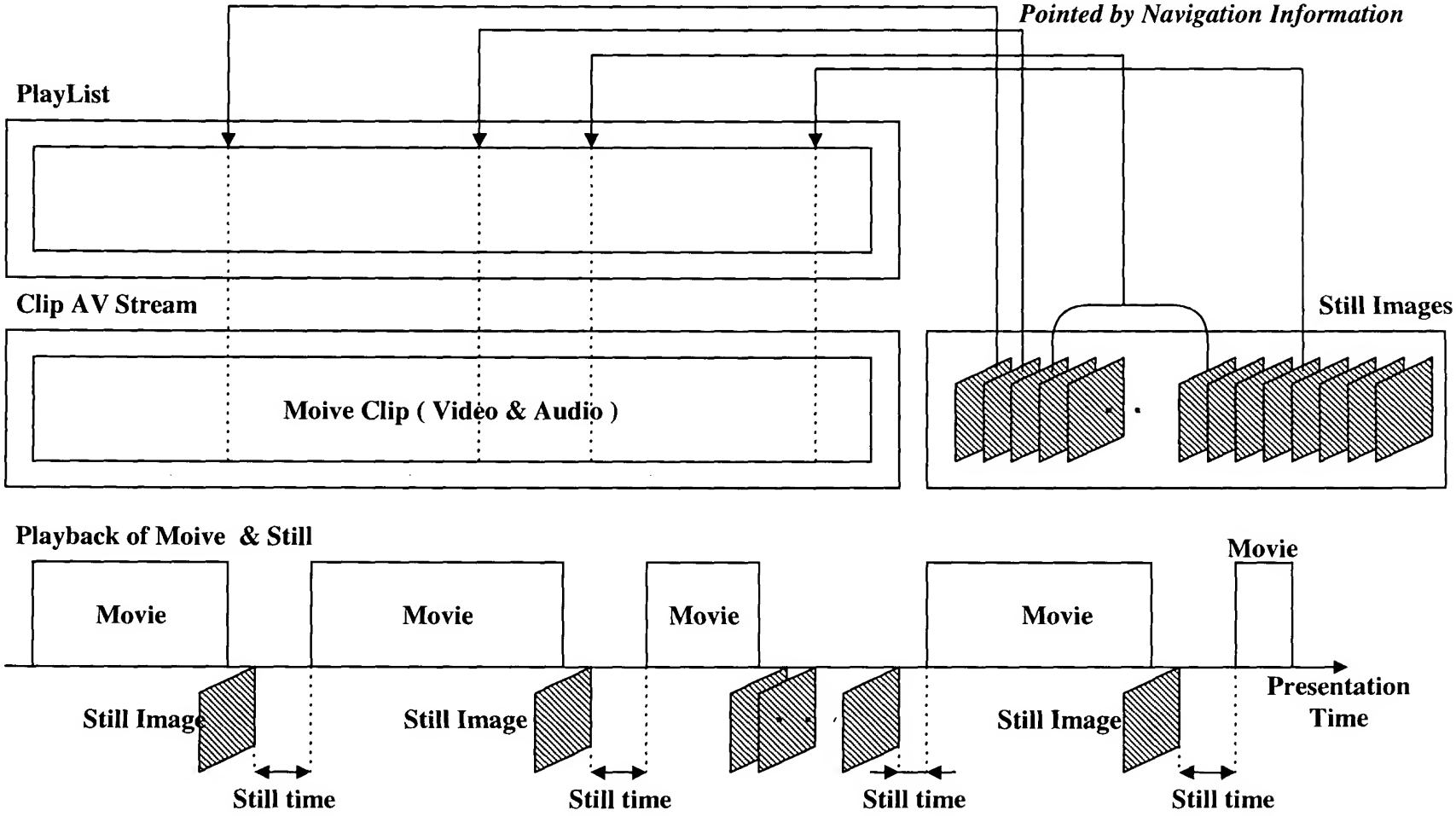

Pointed by Navigation Information
PlayList
Clip AV Stream
Moive Clip (Video & Audio)
Still Images
Playback of Moive & Still
Movie
Movie
Movie
Movie
Movie
Still Image
Still Image
Still Image
Still time
Still time
Still time
Still time
Presentation Time

FIG. 4

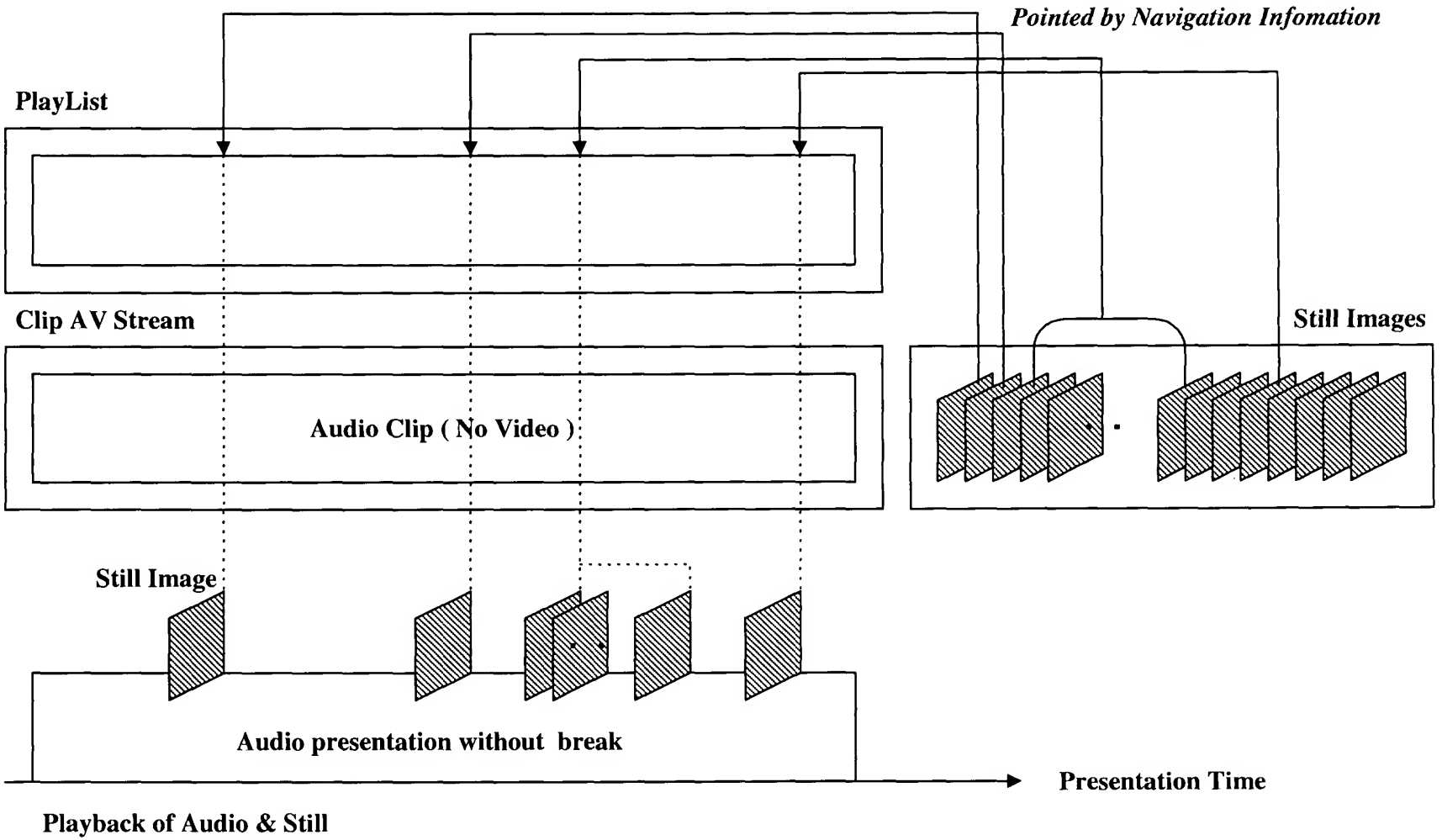

Pointed by Navigation Infomation
PlayList
Clip AV Stream
Audio Clip (No Video)
Still Images
Still Image
Audio presentation without break
Presentation Time
Playback of Audio & Still

FIG. 5A

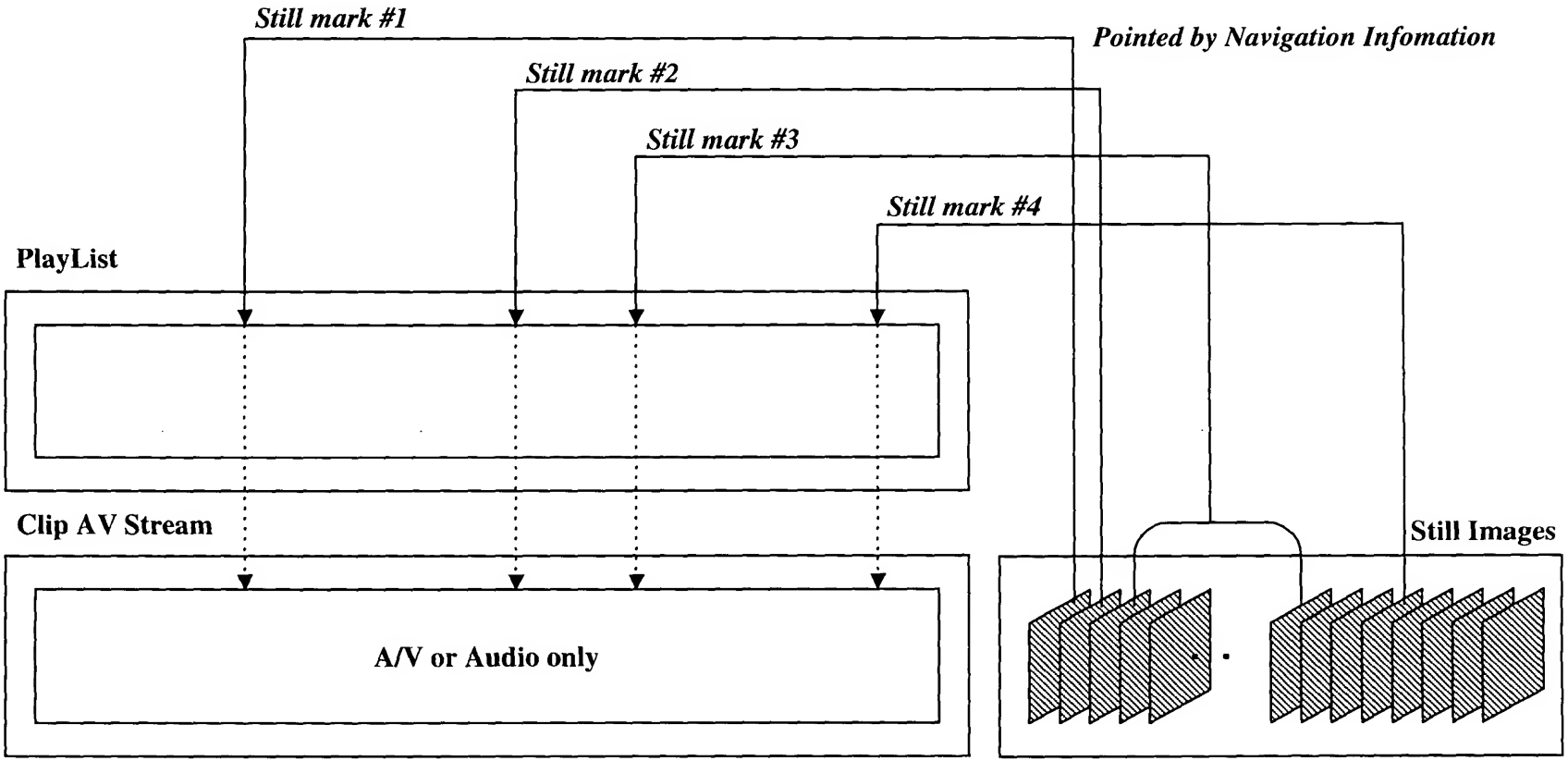

Still mark #1
Pointed by Navigation Infomation
Still mark #2
Still mark #3
Still mark #4
PlayList
Clip AV Stream
A/V or Audio only
Still Images

FIG. 5B

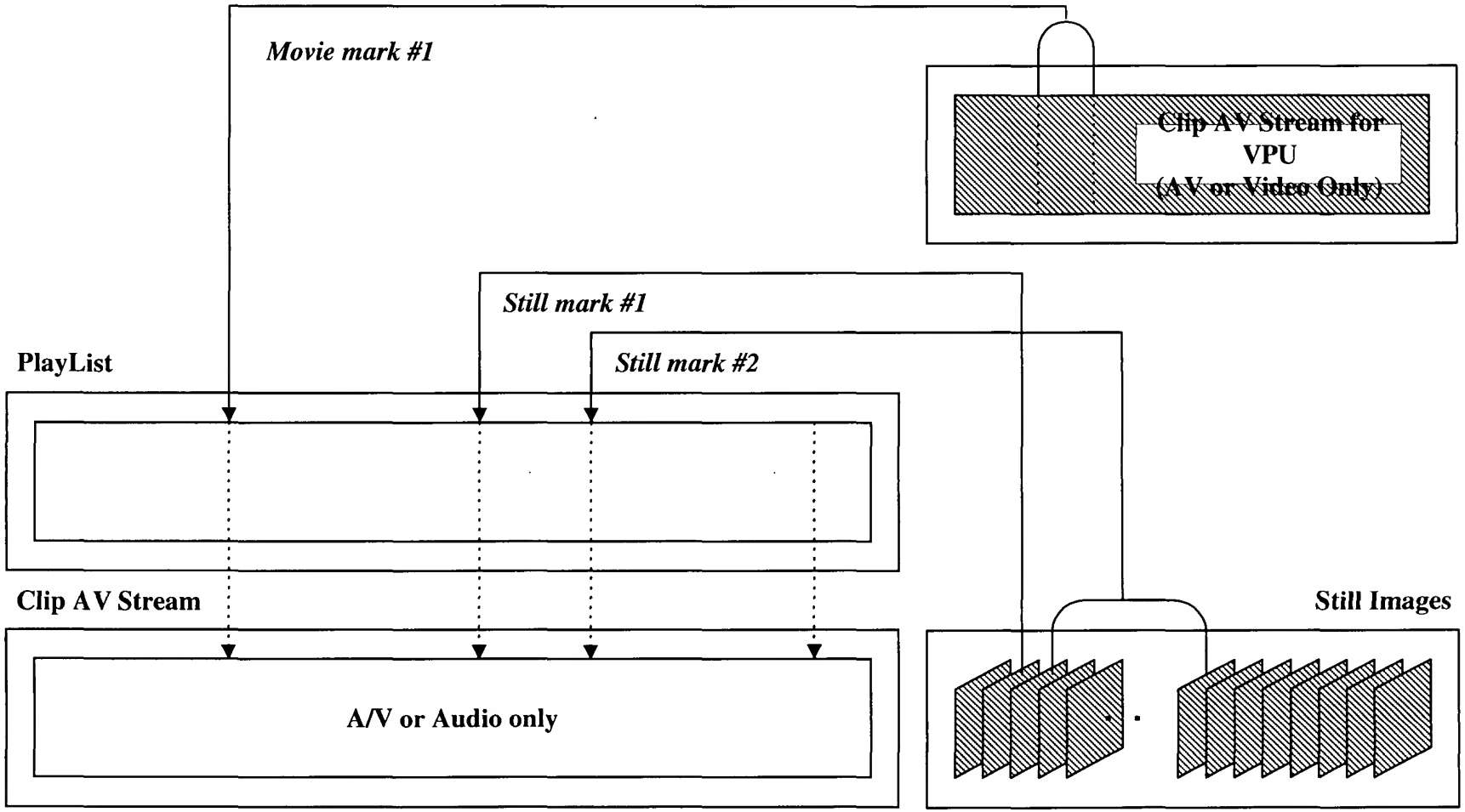

Movie mark #1
Clip AV Stream for VPU (AV or Video Only)
Still mark #1
Still mark #2
PlayList
Clip AV Stream
A/V or Audio only
Still Images

FIG. 6

Case 1

```
PlayListMark(){
        length
        number_of_PlayList_marks
        for(i=0; j<number_of_PlayList_marks;j++){
                - - - - -
                mark_type
                - - - - -
                mark_time_stamp

                - - - - -


                ref_to_still_image_index

                duration
                makers_information
                maker_name
                }
}
```

FIG. 7A

Case 2

```
PlayListMark(){
        length
        number_of_PlayList_marks
        for(i=0; j<number_of_PlayList_marks;j++){
                - - - - -
                mark_type
                - - - - -
                mark_time_stamp

                - - - - -

                ref_to_still_image_index

                duration
                makers_information
                maker_name
                if (mark_type==0x10){
                        number_of_still_images
                        display_timing_mode
                        display_order_mode
                        display_effect_mode
                        display_effect_period
                        }
                }
}
```

FIG. 7B

Movie & Still Mark

```
PlayListMark(){
        length
        number_of_PlayList_marks
        for(i=0; j<number_of_PlayList_marks;j++){
                - - - - -
                mark_type
                - - - - -
                mark_time_stamp

                - - - - -
                ref_to_still_image_index

                duration
                makers_information
                maker_name
                if (mark_type==0x10){
                        number_of_still_images
                        display_timing_mode
                        display_order_mode
                        display_effect_mode
                        display_effect_period
                        }
                if (mark_type == 0x11){
                        VPU_Clip_file_name
                        VPU_start_TM
                        VPU_end_TM
                        VPU_data_size
                        VPU_info
                }
}
```

FIG. 7C

Movie Mark

```
PlayListMark(){
        length
        number_of_PlayList_marks
        for(i=0; j<number_of_PlayList_marks;j++){
                - - - - -
                mark_type
                - - - - -
                mark_time_stamp
                - - - - -
                duration
                makers_information
                maker_name
                }
                if (mark_type == 0x11){
                        VPU_Clip_file_name
                        VPU_start_TM
                        VPU_end_TM
                        VPU_data_size
                        VPU_info
                }
}
```

FIG. 8A

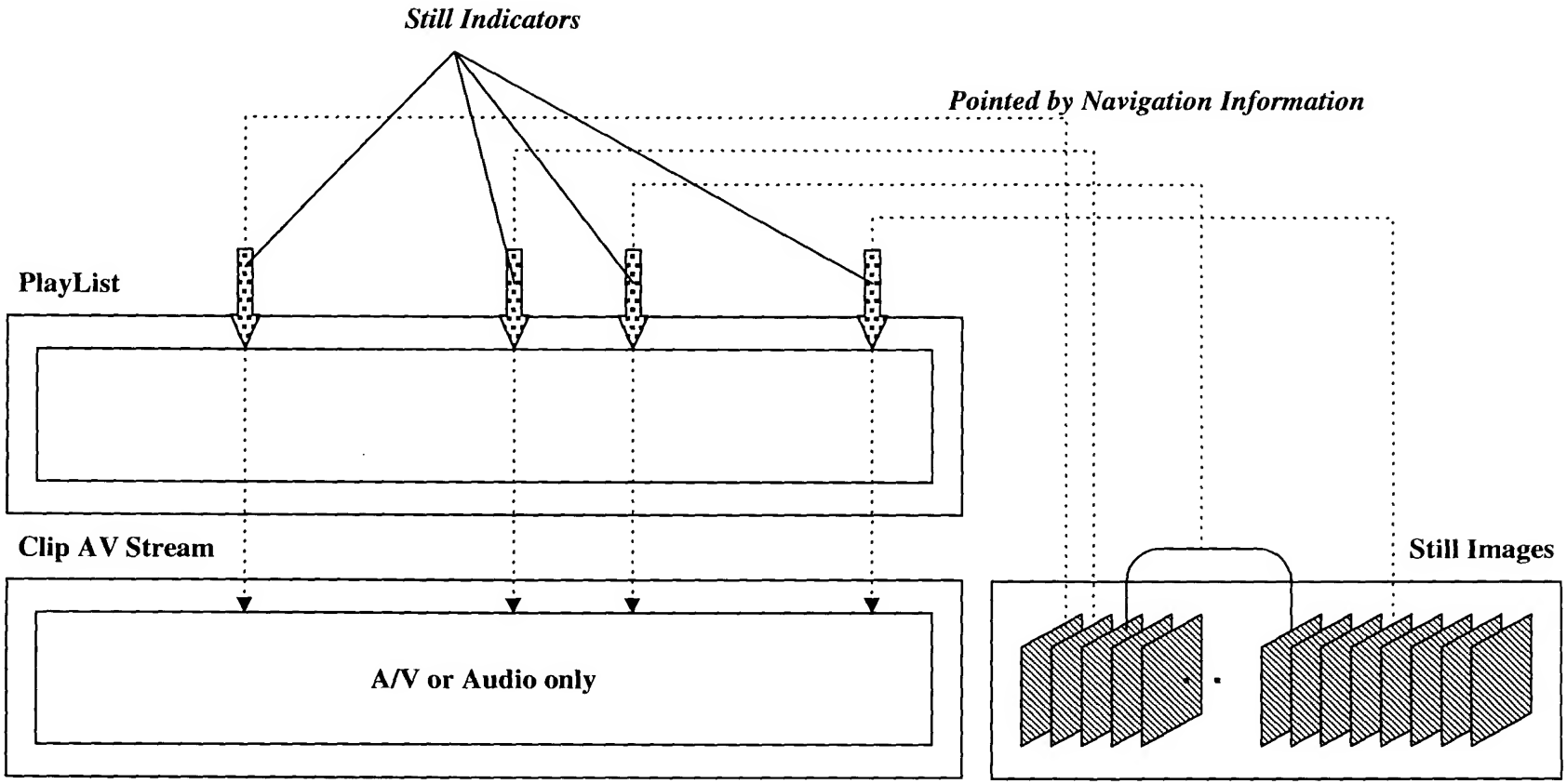

Still Indicators
Pointed by Navigation Information
PlayList
Clip AV Stream
A/V or Audio only
Still Images

FIG. 8B

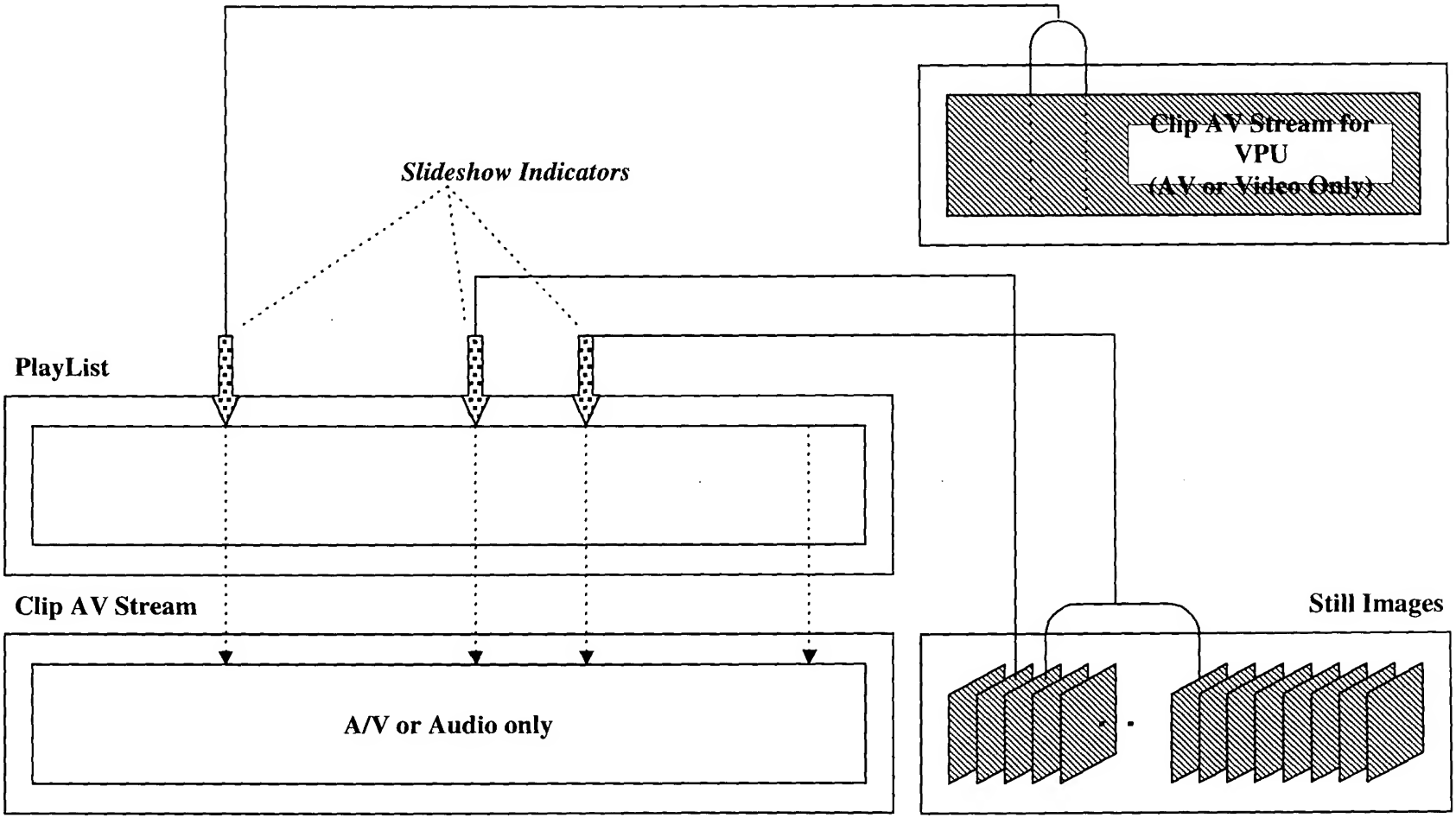
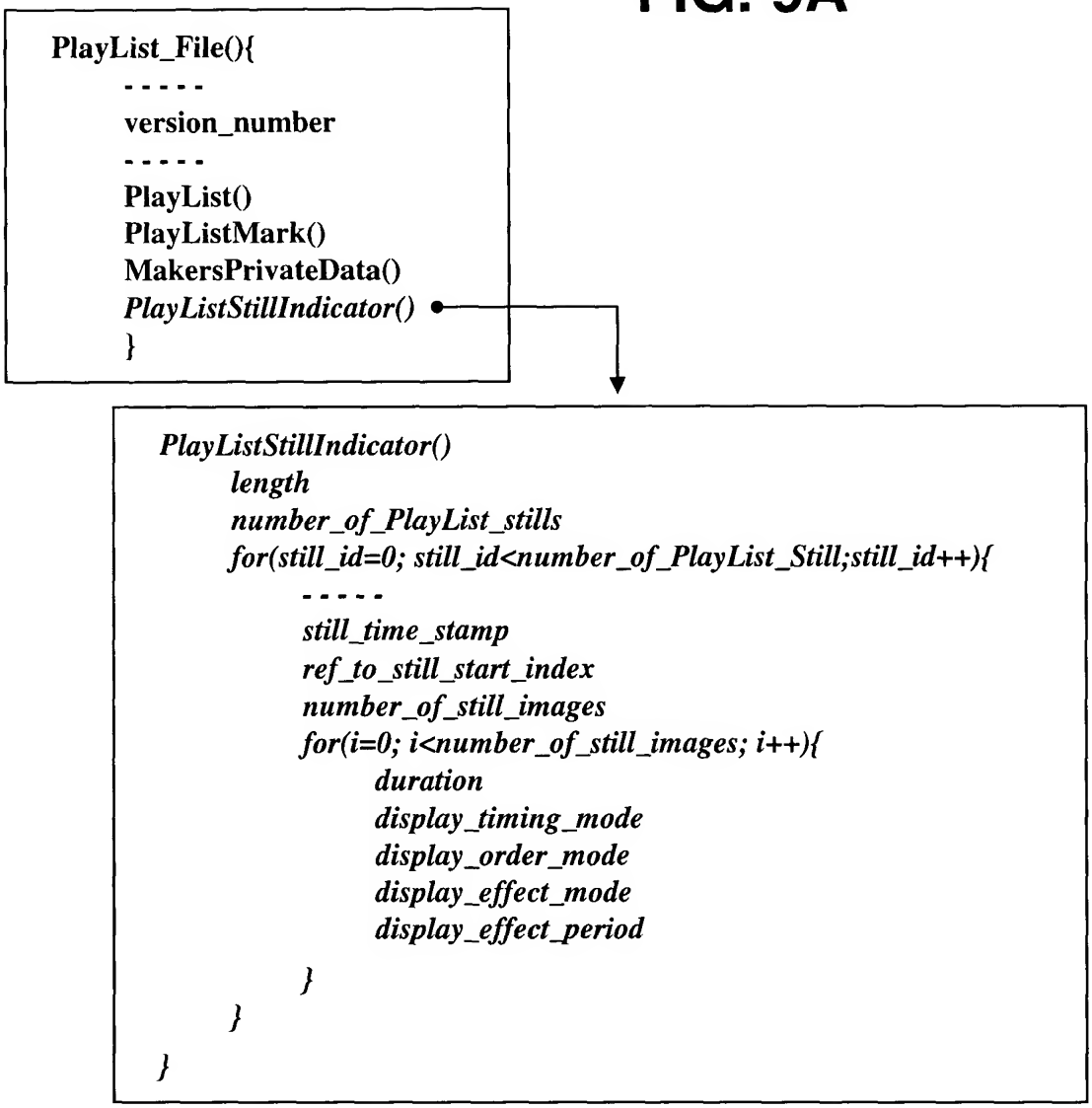

Clip AV Stream for VPU (AV or Video Only)
Slideshow Indicators
PlayList
Clip AV Stream
A/V or Audio only
Still Images

FIG. 9A


PlayList_File(){
- - - - -
version_number
- - - - -
PlayList()
PlayListMark()
MakersPrivateData()
PlayListStillIndicator()
}
PlayListStillIndicator()
length
number_of_PlayList_stills
for(still_id=0; still_id<number_of_PlayList_Still;still_id++){
- - - - -
still_time_stamp
ref_to_still_start_index
number_of_still_images
for(i=0; i<number_of_still_images; i++){
duration
display_timing_mode
display_order_mode
display_effect_mode
display_effect_period
}
}
}

```
PlayList_File(){
    - - - - -
    version_number
    - - - - -
    PlayList()
    PlayListMark()
    MakersPrivateData()
    PlayListSlideshowIndicator()
    }
```

FIG. 9B

```
PlayListSlideshowIndicator()
    length
    number_of_slideshow_objects
    for(id=0; id<number_of_slideshow_objects;id++){
        - - - - -
        time_stamp
        if(Still Image)
            ref_to_still_start_index
            number_of_still_images
            for(i=0; i<number_of_still_images;i++){
                duration
                display_timing_mode
                display_order_mode
                display_effect_mode
                display_effect_period
            }
        }
        else if(VPU) {
            VPU_duration
            VPU_Clip_file_name
            VPU_start_PTM
            VPU_end_PTM
            VPU_data_size
            VPU_info
        }
    }
```

FIG. 10

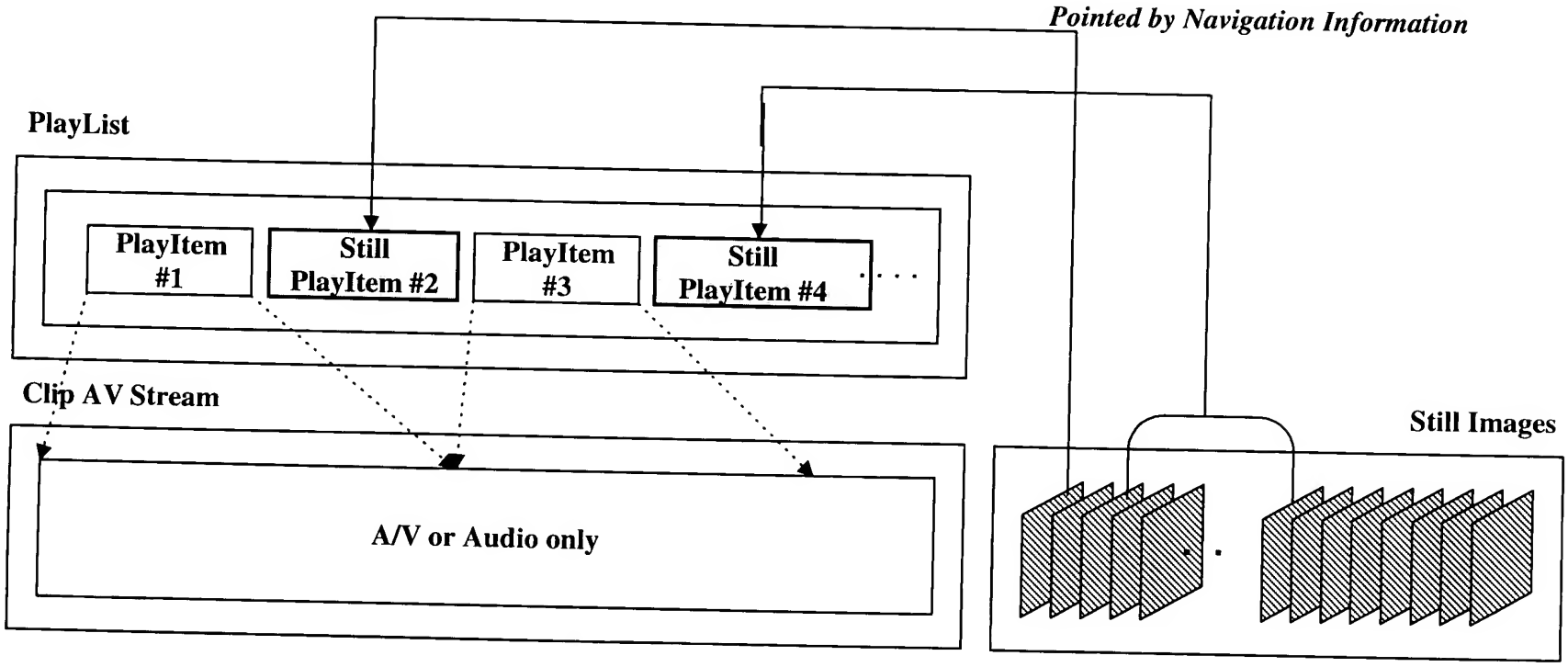

Pointed by Navigation Information
PlayList
PlayItem #1
Still PlayItem #2
PlayItem #3
Still PlayItem #4
Clip AV Stream
A/V or Audio only
Still Images

FIG. 11A

```
PlayItem(){
        length
        Clip_Information_file_name
        Clip_codec_identifier
        if (CPI_type = 1)
                ref_to_STC_id
                        ⋮
        IN_time
        Out_time
                        ⋮
        }
        if (<Still-Image>) {
                number_of_still_images
                for (i=0; i<number_of_still_images; i++){
                        duration
                        display_timing_mode
                        display_order_mode
                        display_effect_mode
                        display_effect_period
                }
        }
}
```

FIG. 11B

```
PlayItem(){
        length
        Clip_Information_file_name
        Clip_codec_identifier
        if (CPI_type = 1)
                ref_to_STC_id
                        ⋮
        if (VPU) {
            VPU duration
            VPU_Clip_file_name
            VPU_start_PTM
            VPU_end_PTM
            VPU_info
        }
}
```

FIG. 12A

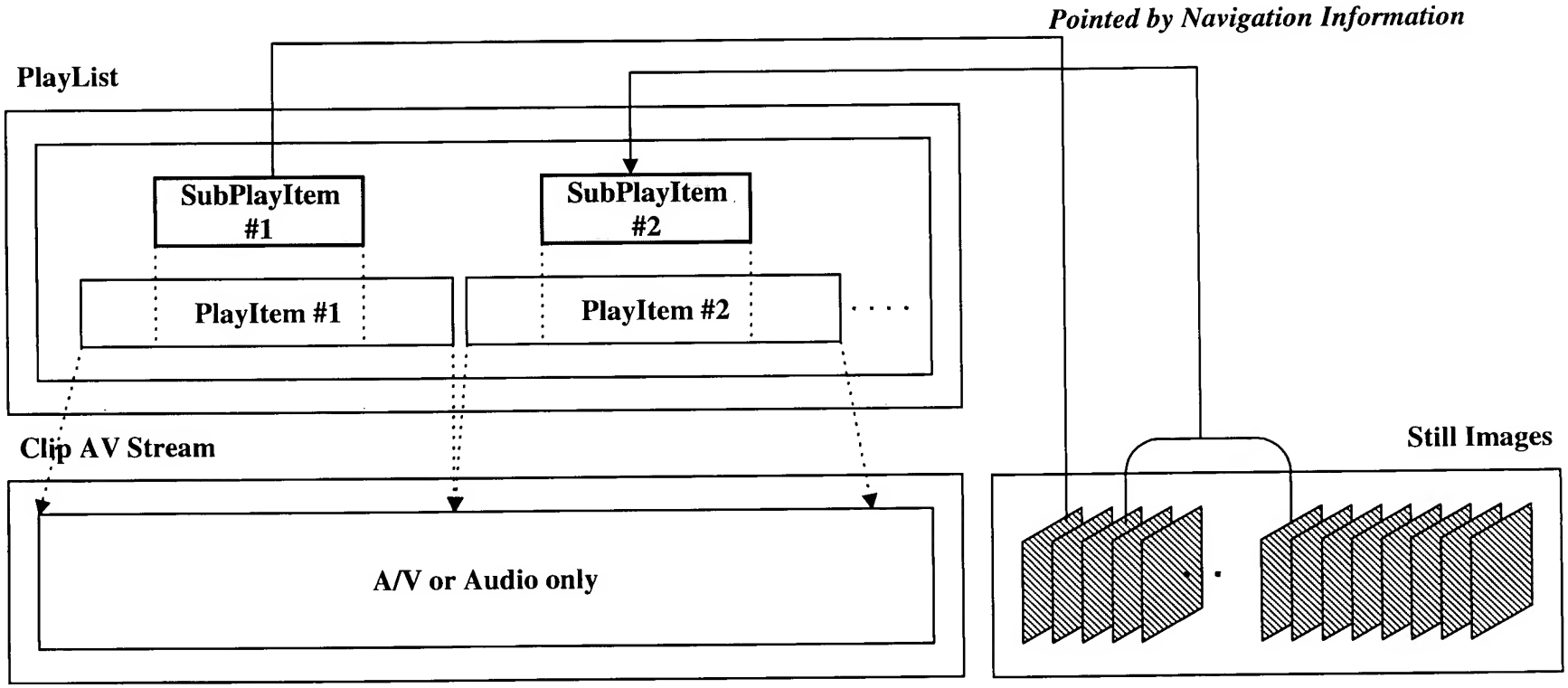

Pointed by Navigation Information
PlayList
SubPlayItem #1
SubPlayItem #2
PlayItem #1
PlayItem #2
Clip AV Stream
A/V or Audio only
Still Images

FIG. 12B

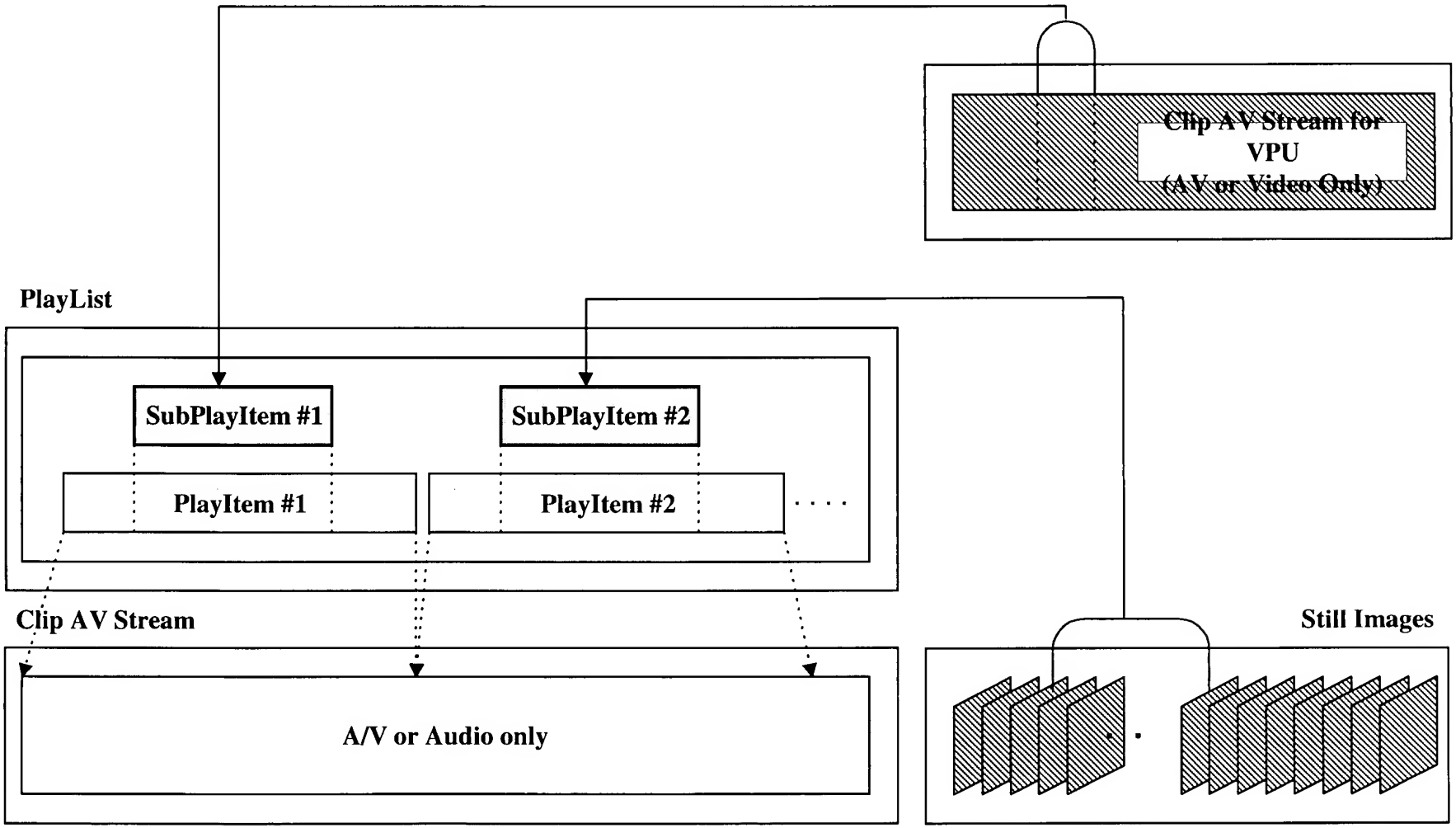

Clip AV Stream for VPU
(AV or Video Only)
PlayList
SubPlayItem #1
SubPlayItem #2
PlayItem #1
PlayItem #2
Clip AV Stream
A/V or Audio only
Still Images

FIG. 13A

```
SubPlayItem(){
    length
    Clip_Information_file_name
    Clip_codec_identifier
    SubPlayItem_type
    ref_to_STC_id
    SubPlayItem_IN_time
    SubPlayItem_Out_time
    sync_PlayItem_id
    Sync_start_PTS_of_PlayItem
    if (<Still-Image>) {
        number_of_still_images
        for (i=0; i<number_of_still_images; i++){
            duration
            display_timing_mode
            display_order_mode
            display_effect_mode
            display_effect_period
        }
    }
}
```

FIG. 13B

```
SubPlayItem(){
    length
    Clip_Information_file_name
    Clip_codec_identifier
    SubPlayItem_type
    ref_to_STC_id
    SubPlayItem_IN_time
    SubPlayItem_Out_time
    sync_PlayItem_id
    Sync_start_PTS_of_PlayItem
    if (<Still-Image>) {
        number_of_still_images
        for (i=0; j<number_of_still_images; j++){
            duration
            display_timing_mode
            display_order_mode
            display_effect_mode
            display_effect_period
        }
    }
    if (<VPU>) {
        VPU_data_size
        VPU_info
    }
}
```

FIG. 14A

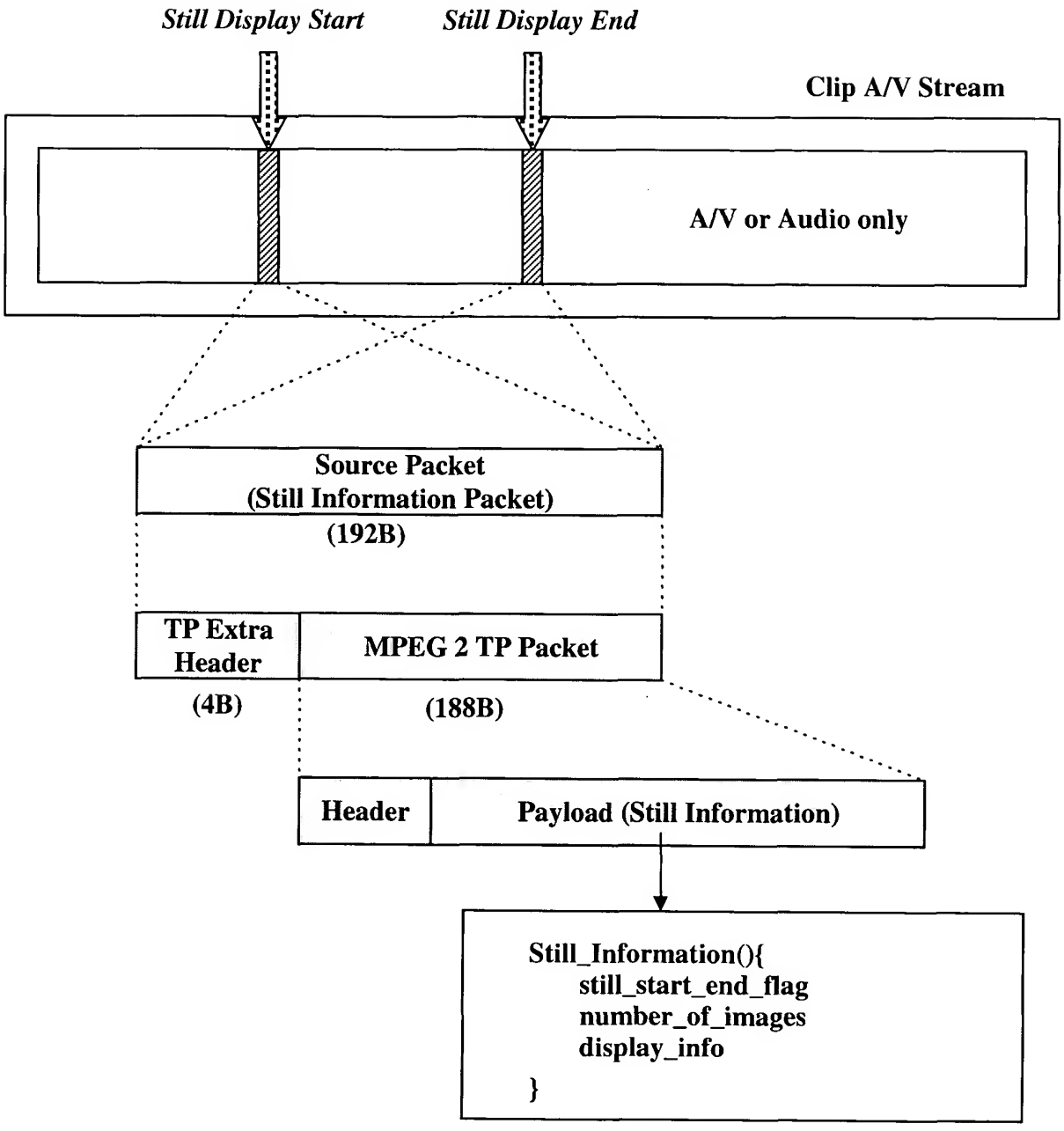

Still Display Start
Still Display End
Clip A/V Stream
A/V or Audio only
Source Packet
(Still Information Packet)
(192B)
TP Extra Header
(4B)
MPEG 2 TP Packet
(188B)
Header
Payload (Still Information)
Still_Information(){
still_start_end_flag
number_of_images
display_info
}

FIG. 14B

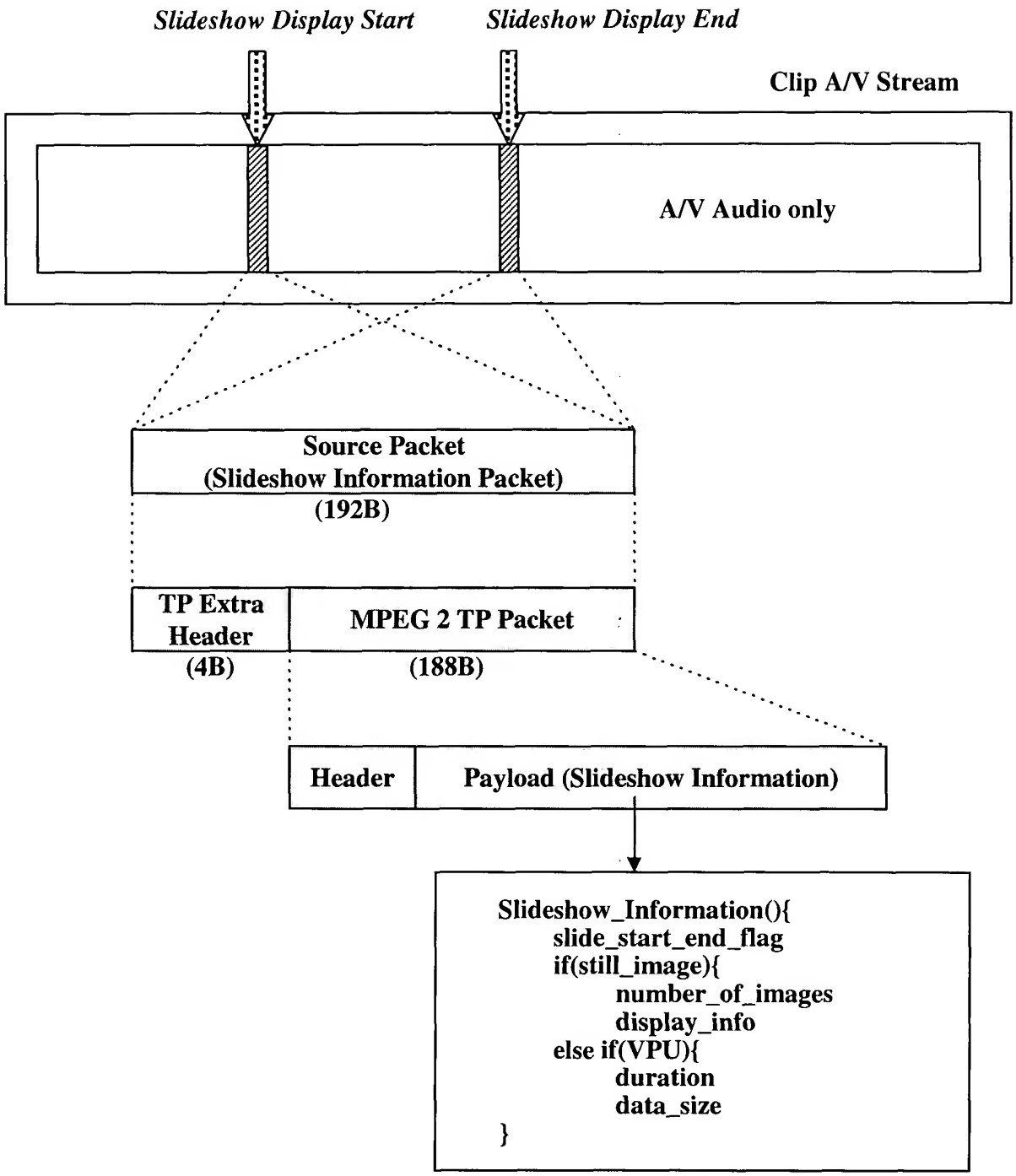

Slideshow Display Start
Slideshow Display End
Clip A/V Stream
A/V Audio only
Source Packet
(Slideshow Information Packet)
(192B)
TP Extra Header
(4B)
MPEG 2 TP Packet
(188B)
Header
Payload (Slideshow Information)
Slideshow_Information(){
slide_start_end_flag
if(still_image){
number_of_images
display_info
else if(VPU){
duration
data_size
}

FIG. 15

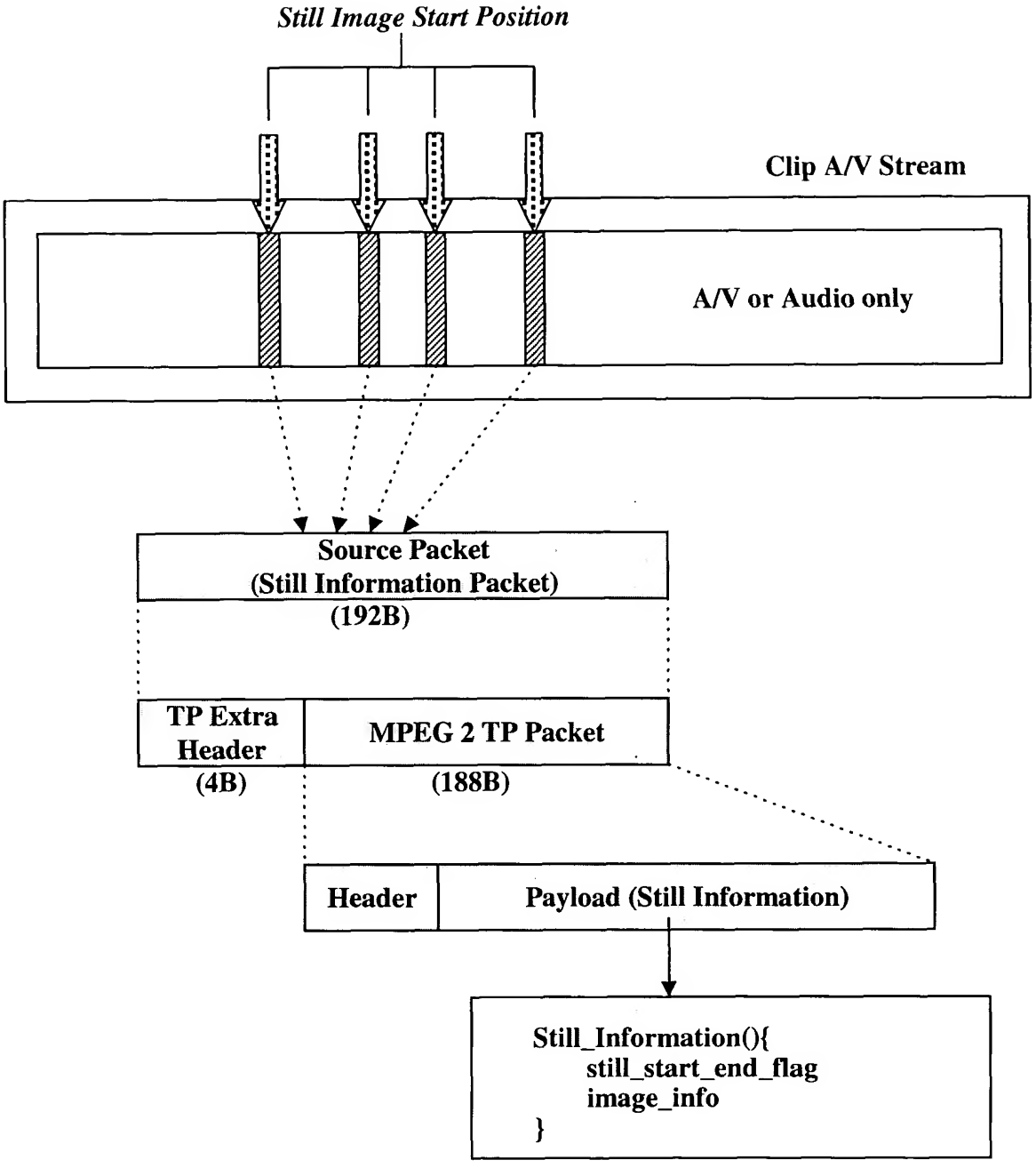

Still Image Start Position
Clip A/V Stream
A/V or Audio only
Source Packet
(Still Information Packet)
(192B)
TP Extra Header
(4B)
MPEG 2 TP Packet
(188B)
Header
Payload (Still Information)
Still_Information(){
still_start_end_flag
image_info
}

FIG. 16

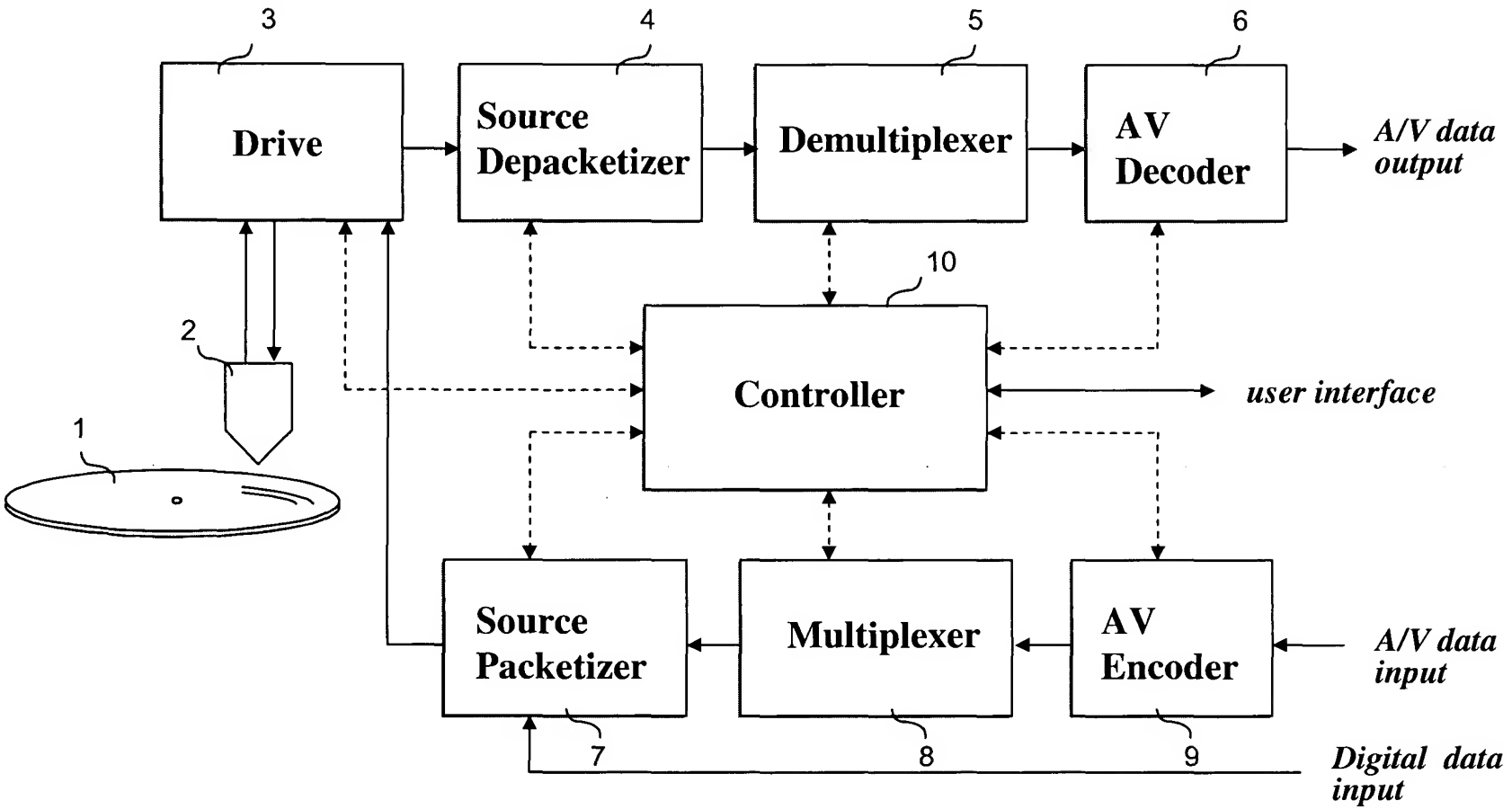

3
4
5
6
Drive
Source Depacketizer
Demultiplexer
AV Decoder
A/V data output
10
2
Controller
user interface
1
Source Packetizer
Multiplexer
AV Encoder
A/V data input
7
8
9
Digital data input

FIG. 17

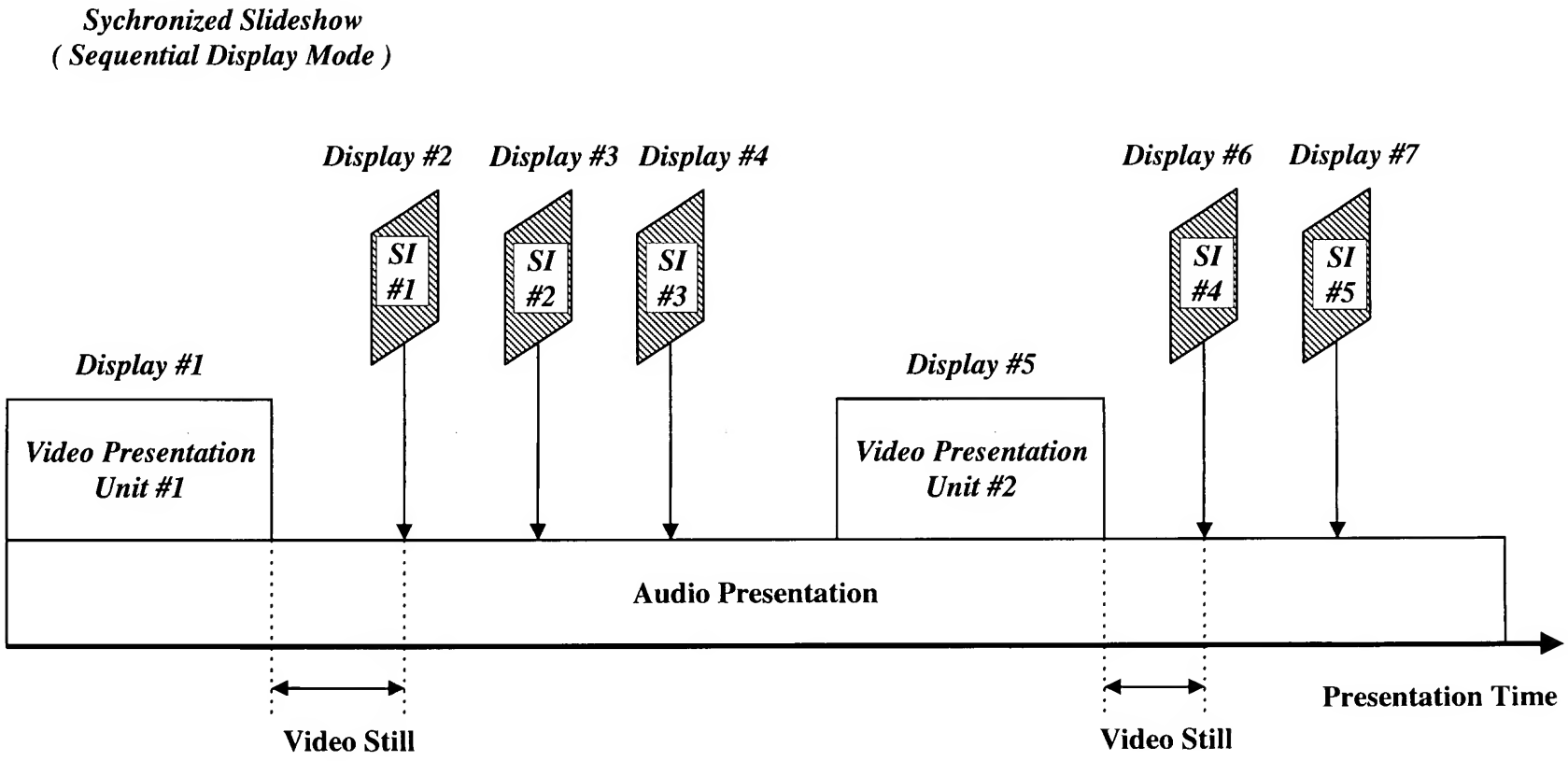

Sychronized Slideshow
(Sequential Display Mode)
Display #2
Display #3
Display #4
Display #6
Display #7
SI #1
SI #2
SI #3
SI #4
SI #5
Display #1
Display #5
Video Presentation Unit #1
Video Presentation Unit #2
Audio Presentation
Presentation Time
Video Still
Video Still

FIG. 18

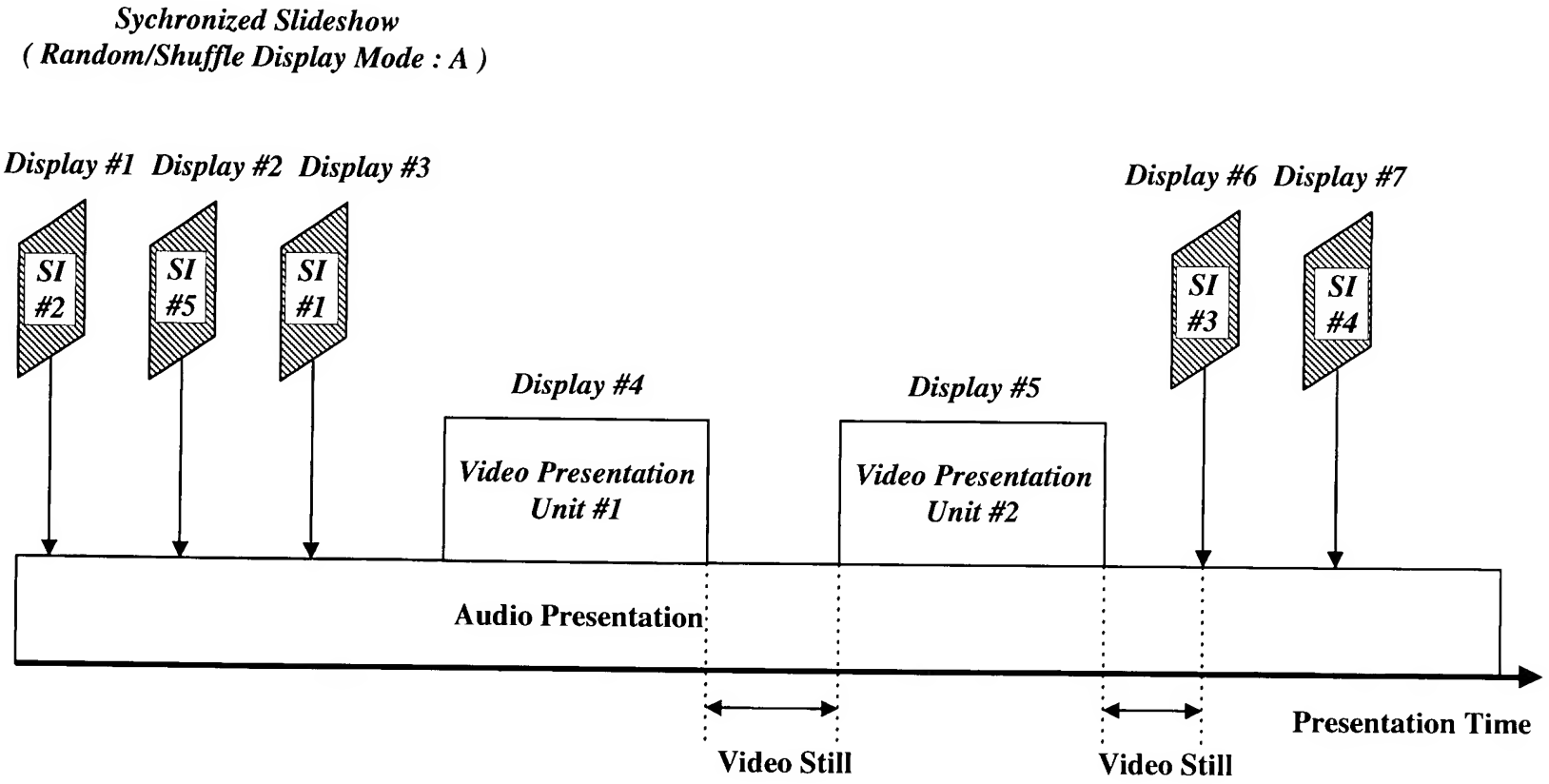

Sychronized Slideshow
(Random/Shuffle Display Mode : A)
Display #1
Display #2
Display #3
Display #6
Display #7
SI #2
SI #5
SI #1
SI #3
SI #4
Display #4
Display #5
Video Presentation Unit #1
Video Presentation Unit #2
Audio Presentation
Presentation Time
Video Still
Video Still

FIG. 19

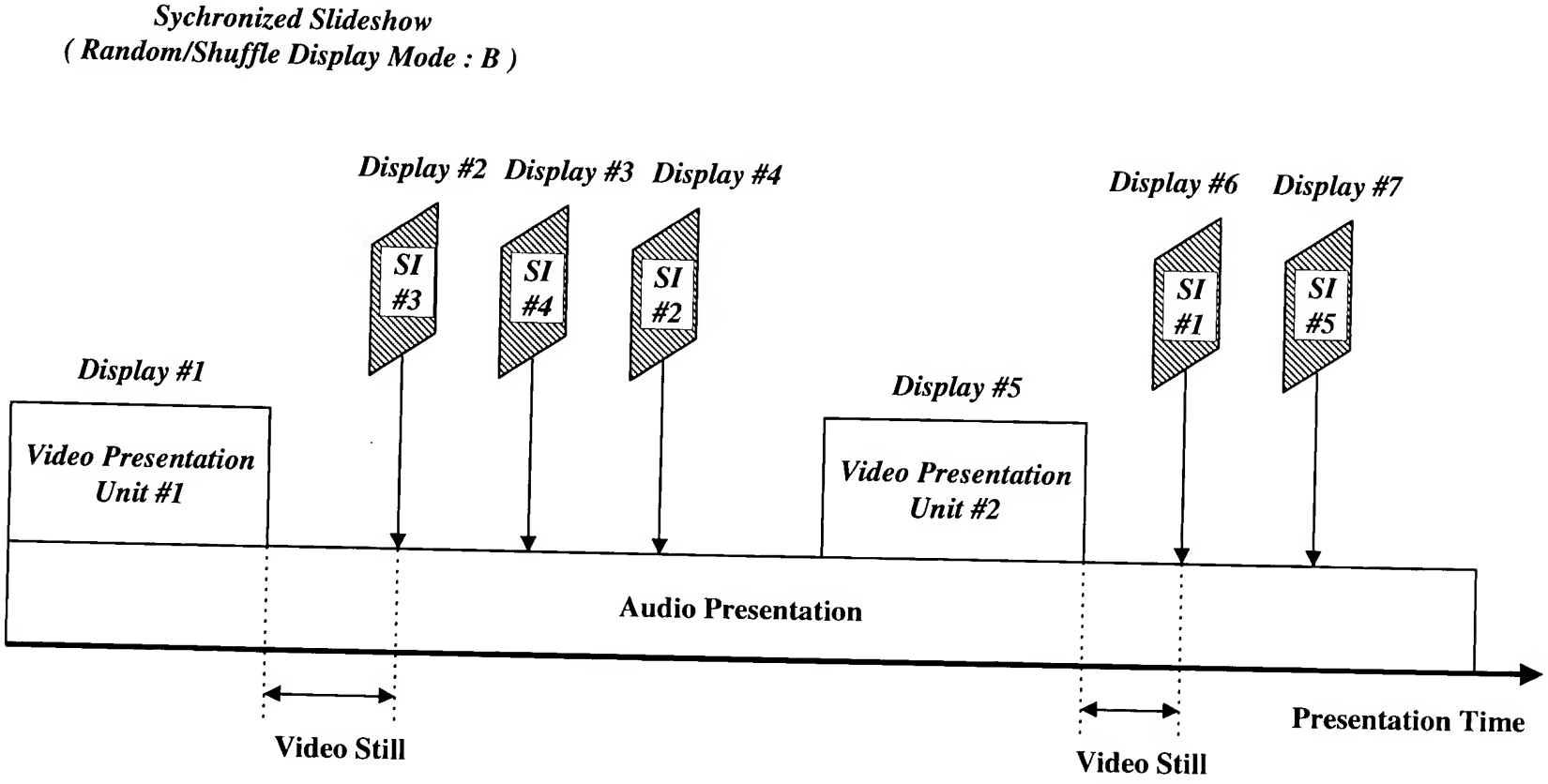
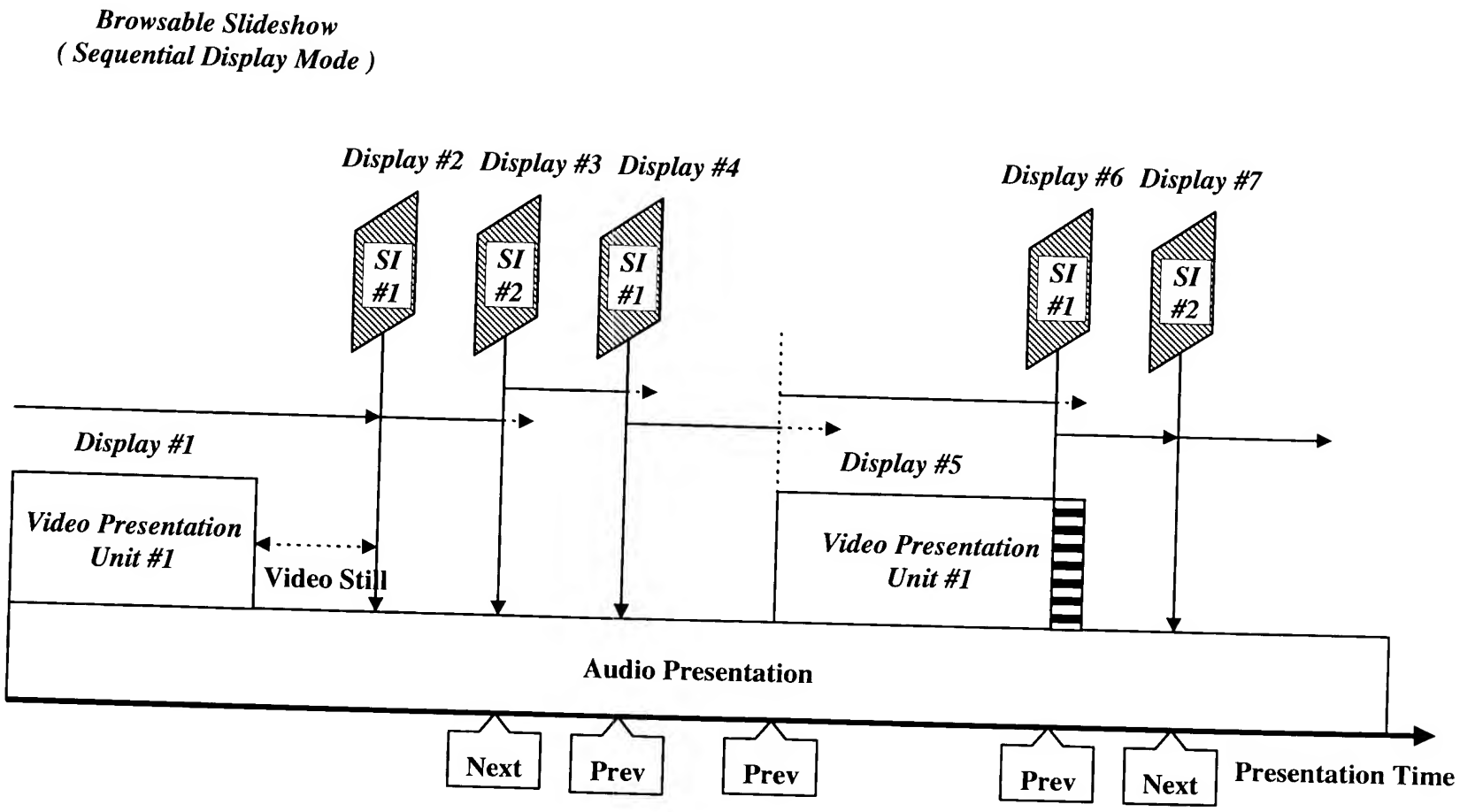

Sychronized Slideshow
(Random/Shuffle Display Mode : B)
Display #2
Display #3
Display #4
Display #6
Display #7
SI #3
SI #4
SI #2
SI #1
SI #5
Display #1
Display #5
Video Presentation Unit #1
Video Presentation Unit #2
Audio Presentation
Video Still
Video Still
Presentation Time

FIG. 20


Browsable Slideshow
(Sequential Display Mode)
Display #2
Display #3
Display #4
Display #6
Display #7
SI #1
SI #2
SI #1
SI #1
SI #2
Display #1
Display #5
Video Presentation Unit #1
Video Still
Video Presentation Unit #1
Audio Presentation
Next
Prev
Prev
Prev
Next
Presentation Time